

For the drawings which illustrate this paper I am indebted to the kindness and skill of the accomplished artist, Mr. Robert Farren.

EXPLANATION OF PLATES X. & XI.

[All the figures are of the natural size.]

PLATE X.

- Fig. 1. *Crioceras occultus*, Seeley: *a*, lateral view; *b*, ventral view, showing how the dorsal spines indented the succeeding whorl; *c*, a section and septum; *d*, dorsal view.  
Fig. 2. *Ammonites cælonotus*, Seeley.  
Fig. 3. — — —, var.  
Fig. 4. — *glossonotus*, Seeley.  
Fig. 5. — *leptus*, Seeley.

PLATE XI.

- Fig. 1. *Ammonites sexangulatus*, Seeley.  
Fig. 2. — *cratus*, Seeley.  
Fig. 3. — *Woodwardi*, Seeley.  
Fig. 4. — *pachys*, Seeley.  
Fig. 5. — *acanthonotus*, Seeley.  
Fig. 6. Var. of *A. Renauxianus*, Pictet & Camp.  
Fig. 7. *A. rhamnonotus*, Seeley.

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XXVIII.—*Descriptions of new Genera and Species of Gallerucidæ.*

By J. S. BALY.

Fam. Gallerucidæ.

Subfam. HALTICINÆ.

Genus SIMÆTHEA.

*Corpus* elongatum, parallelum, subcylindricum. *Caput* exsertum, fere perpendiculare, pone oculos constrictum; *oculis* orbitu circumdatis, prominentibus, integris; *facie* inter antennarum insertiones elevata; *encarpis* triangularibus, supra fossa transversa profunda terminatis; *antennis* corporis longitudini fere æqualibus, filiformibus, articulis cylindricis, primo breviter curvato, a basi ad apicem paullo incrassato, secundo brevi, obconico, tertio ad primi longitudinem æquali. *Thorax* transversus, basi vix transversim sulcatus, disco convexus, lateribus anguste marginatis, rotundatis, angulis anticis dente obtuso armatis. *Elytra* thorace paullo latiora, parallela, apice subacute rotundata, supra convexa, regulariter punctato-striata. *Pedes* robusti; *coxis* anticis non contiguis, suberectis; *femoribus* paullo, *posticis* magis incrassatis, his subtus non sulcatis; *tibiis* omnibus apice spina acuta armatis; *tarsorum* posteriorum articulo primo duobus sequentibus paullo brevioribus; *unguiculis* appendiculatis. *Prosternum* distinctum sed angustissimum.

Type, *Simæthea Laportei*, Baly.

*Simæthea* must be placed in close proximity to *Podagrica*. In

addition to its much greater size, it may be at once known by the absence of the short perpendicular grooves present at the base of the thorax in *Podagricæ*; it presents also an abundance of other distinctive characters.

*Simathea Laportei.*

*S. elongata*, parallela, subcylindrica, nitida; ore, pectore femoribusque piceis; tibiis tarsisque fusco-fulvis; antennis flavis, apice paullo infuscatis; thorace profunde sed remote punctato; scutello rufopiceo; elytris sat profunde punctato-striatis, rufis, apice nigris. Long. 4 lin.

*Hab.* Tringaneæ.

Epistome triangular, the lower part of its surface plain, the apical portion obliquely elevated; face thickened and elevated between the insertions of the antennæ, but without forming the usual facial ridge; encarpæ contiguous, large, subquadrate, the lower and inner angle of each produced downwards; bounding the encarpæ above is a deep transverse groove, the upper edge of which is oblique, and gradually lost on the surface of the front; running upwards from this groove are a number of short, nearly perpendicular grooved lines. Thorax rather broader than long; sides narrowly margined, moderately rounded; upper surface convex. Scutellum trigonate, its apex obtuse. Elytra scarcely broader than the thorax, parallel, each elytron faintly impressed on the middle of the disk just below the basilar space; deeply punctured, the punctures somewhat remotely placed in ten or eleven longitudinal rows; the black apex varies greatly in extent, in some specimens being nearly lost, in others occupying almost a third of the surface.

Genus XUTHEA.

*Corpus* elongato-ovatum, convexum. *Caput* exsertum; *facie* triangulari, *carina* lata, modice elevata; *encarpis* non contiguous; *antennis* gracilibus, filiformibus, corporis longitudine brevioribus, articulo primo paullo curvato, incrassato, secundo illo fere dimidio brevior, a basi ad apicem modice incrassato, cæteris gracilibus, singulatim primo æqualibus; *oculis* orbitu circumdatis, prominulis, integris. *Thorax* transversus, lateribus anguste marginatis, fere parallelis, angulis anticis tuberculo setifero armatis, dorso ante basin transversim sulcatus, sulco utrinque fossa perpendiculari brevi ad basin producta terminato. *Elytra* regulariter punctato-striata. *Pedes* modice robusti; *coxis* anticis distantibus, prosterno fere æqualtis; *femoribus* posticis modice incrassatis, subtus leviter sulcatis; *tibiis* omnibus apice spina acuta armatis; *tarsorum* articulo basali ♂ ampliati, *posticorum* articulo basali duobus sequentibus conjunctim

fere æquali, tibiæ apici inserto; *unguiculis* appendiculatis. *Prosternum* angustum.

Type, *Xuthea orientalis*.

This genus resembles *Diplaulaca* in the form of its thorax, *Crepidodera* in the form and punctuation of its elytra; from the latter it is separated by all the tibiæ having a short spine at their apex, from the former by the entirely different shape and punctuation of the elytra.

*Xuthea orientalis*.

*X. elongato-ovata*, convexa, supra viridi-cyanea, nitida, subtus obscure viridi- aut piceo-ænea; coxis, tibiis tarsisque piceis, plus minusve æneo tinctis; thorace fortiter subremote punctato; elytris nitidis ♂, minute granulosis, subnitidis ♀, regulariter punctato-striatis; antennis fulvis, extrorsum piceis.

Long. 3-3½ lin.

*Hab.* India.

Head exserted, face triangular; mouth pale piceous; space between the eyes rugose; carina moderately elevated, not very broad; encarpæ ill defined, remote; face separated from the front by a deep flexuose groove which runs obliquely upwards on either side from the apex of the carina; vertex obsoletely wrinkled in front, very remotely impressed with large punctures; whole face clothed with coarse, depressed, whitish hairs. Thorax one-half as broad as long; sides straight and parallel, slightly converging and sinuate in front; surface nitidous, strongly but subremotely punctured, all the angles slightly produced, acute, the anterior somewhat reflexed. Elytra smooth and nitidous in the ♂, subnitidous and very minutely granulose in the ♀, regularly punctate-striate, interspaces plane; basilar space in each elytron bounded by a semicircular depression. Body beneath clothed with coarse, adpressed, whitish hairs. Basal joints of all the tarsi in the ♂ dilated, the middle elevated into a longitudinal ridge.

Subfam. GALLERUCINÆ.

Genus CYNORTA.

*Corpus* elongatum, angustum, parallelum. *Caput* exsertum; *faciè* subelongata, plana, subporrecta, inter antennarum insertiones elevata; mandibulis sat robustis, antrorsum productis; *antennis* gracilibus, filiformibus, corporis longitudini fere æqualibus, articulo primo elongato, paullo curvato, a basi ad apicem incrassato, secundo brevissimo, obovato, cæteris fere æqualibus, singulis primo brevioribus, quarto tertio paullo longiore; *palpis* maxillaribus apice ovatis; *oculis* prominentibus. *Thorax* transverso-quadratus, lateribus anguste marginatis, fere parallelis; disco modice convexo, profunde

impresso. *Elytra* thorace paullo latiora, parallela, crebre punctata, leviter elevato-vittata. *Pedes* elongati, graciles; *coxis* anticis contiguis, erectis; *femoribus* vix incrassatis, subcompressis; *tibiis* omnibus singulatim apice spina acuta armatis; *tarsorum* posteriorum sequentibus longitudine æquali; *unguiculis* appendiculatis. *Prosternum* obsoletum.

Type, *Cynorta porrecta*.

The long, narrow form and produced head will serve to distinguish this well-marked genus at first sight from its allies.

#### *Cynorta porrecta*.

*C. elongata*, subfiliformis, viridi-ænea, nitida; capite (vertice excepto), thorace femoribusque fulvis; thorace granuloso, arcuatim bisulcato, violaceo-æneo suffuso; femoribus dorso, tibiis, tarsis antennisque (his basi exceptis) piceis; elytris granulosis, elevato-vittatis, interspatiis confuse bifariam punctatis, interstitiis inter se reticulatis.

Long.  $3\frac{1}{2}$  lin.

*Hab.* Java.

Face subporrect, vertex granulose, metallic green, apex of jaws and palpi piceous. Thorax scarcely broader than long; sides slightly diverging from their base to beyond their middle, then slightly converging to the apex; disk moderately convex, somewhat flattened in the middle, impressed on the centre with two curved foveæ, contiguous at the base, diverging towards their apices.

#### Genus NADRANA.

*Corpus* anguste ovatum, sat convexum. *Caput* modice exsertum, perpendiculare; *antennis* corporis longitudine, gracillimis, filiformibus, articulo primo curvato, a basi ad apicem leviter incrassato, secundo brevi, cæteris articulo quarto singulatim fere æqualibus; *oculis* sat magnis, modice prominulis, integris; *palpis* maxillaribus apice ovatis, acutis. *Thorax* brevis, transversus, lateribus marginatis, angulis anticis obliquis, incrassatis; disco leviter transversim sulcato. *Elytra* ovata, convexa, infra basin non transversim impressa, confuse punctata. *Pedes* graciles, sat elongati; *coxis* anticis erectis, contiguis; *femoribus* posterioribus non incrassatis; *tibiis* omnibus apice spina acuta armatis; *tarsorum* posteriorum articulo primo elongato, duobus sequentibus conjunctim plus duplo longiore; *unguiculis* appendiculatis. *Prosternum* fere obsoletum; *metasternum* utrinque oblique depressum.

Type, *Nadrana pallidicornis*.

*Nadrana* is nearly allied to *Luperodes*; it is to be distinguished from it by the grooved thorax and more slender antennæ, together with the relatively longer third joint of the latter.

*Nadrana pallidicornis.*

*N.* elongato-ovata, valde convexa, nigra, nitida; vertice, tibiis quatuor anticis apice tarsisque piceis; antennis pallide flavis; elytris tenuiter suberebre punctatis, rufis.

Long.  $3\frac{3}{4}$  lin.

*Hab.* Tringaneæ.

Thorax three times as broad as long; sides rounded, their outer margin narrowly reflexed; above transversely convex, very finely punctured; middle of disk covered with a broad, shallow, transverse excavation, which does not quite extend to the outer border of the thorax. Apical border of elytra narrowly edged with piceous.

GENUS ANTIPHA.

*Corpus* ovatum, postice ampliatus, convexum. *Caput* exsertum, subperpendiculare; *antennis* gracillimis, filiformibus, corpore brevioribus, articulis cylindricis, primo curvato, a basi ad apicem incrassato, secundo brevi, tertio primi longitudinis aut brevioris, quarto duobus præcedentibus æquali aut longiore, cæteris singulatim quarti longitudini fere æqualibus, iis prope apicem paullo brevioribus; *oculis* magnis, prominentibus, integris. *Thorax* transversus, dorso non impressus, lateribus fere rectis, parallelis, angulis anticis incrassatis. *Elytra* thorace multo latiora, oblonga, postice paullo ampliata, convexa, infra basin non transversim impressa, confuse punctata. *Pedes* graciles, simplices; *coxis* anticis suberectis, non contiguis; *femoribus* posticis non incrassatis; *tibiis* omnibus apice muticis; *tarsorum* posticorum articulo basali duobus sequentibus conjunctim longiore; *unguiculis* appendiculatis. *Prosternum* angustissimum, distinctum.

Type, *Antipha picipes*.

The glabrous upper surface, smooth thorax, long slender legs and antennæ, unarmed tibiæ, and appendiculated claws afford sufficiently good characters (taken conjointly) for the foundation of the present genus.

*Antipha picipes.*

*L.* ovata, postice ampliata, valde convexa, nitida, fusco-fulva; oculis nigris; epistomate, antennis (basi excepta), thorace infra, abdominis limbo pedibusque piceis, thoracis disco fusco maculato.

Long.  $4\frac{1}{2}$  lin.

*Hab.* India.

Face triangular: thorax nearly twice as broad as long; sides straight, slightly converging from base to apex, hinder angles acute, anterior thickened, oblique; smooth on the disk, very finely punctured on the sides: elytra more coarsely punctured, on the outer disk is a longitudinal costa which runs parallel to the outer margin for its middle two-fourths.

## Genus ΜΟΜÆΑ.

*Corpus* elongatum aut subelongatum, convexum. *Caput* crassum, valde exsertum; *fronte* lata, declivi; *facie* perpendiculari; *mandibulis* magnis; *antennis* corporis longitudini æqualibus aut paullo brevioribus, filiformibus, ad apicem attenuatis, articulo primo curvato, a basi ad apicem incrassato, secundo primi dimidiæ parti æquali aut paullo brevioris, tertio elongato, articulo quarto longiore, cæteris singulatim quarto æqualibus; *palpis* maxillaribus crassis, apice acuminatis; *oculis* vix prominulis, integris. *Thorax* transversus, lateribus anguste marginatis, obtuse angulatis, angulis omnibus tuberculo setigero instructis; disco transversim concavo, medio longitudinaliter excavato, utrinque transversim sulcato. *Elytra* metallica, thorace latiora, fere parallela, convexa, infra basin transversim depressa, confuse punctata, glabra aut postice pube tenuissima sparse vestita. *Pedes* modice robusti, sat elongati; *coxis* anticis erectis, fere contiguus; *femoribus* posticis non incrassatis; *tibiis* omnibus apice muticis; *tarsorum* posticorum articulo basali duobus sequentibus longiore; *unguiculis* bifidis. *Prosternum* lineariforme.

Type, *Momæa viridipennis*.

The longer third joint of the antennæ, together with the different manner in which the thorax is excavated, will separate this genus from *Nicea* and *Eumæa*, two nearly allied forms. There is a slight error in the characters given by me of the latter genus (*Annals*, January 1865, p. 37); it ought to read—"Prosternum angustissimum aut obsoletum; *tibiis coxis* anticis contiguus." In both *Nicea* and *Eumæa* all the tibiæ have their apices unarmed.

*Momæa viridipennis*.

*M. elongata*, convexa, fusco-fulva, nitida; capite (epistomate excepto) nigro-piceo; pedibus antennisque nigris; clytris viridi-æneis, crebre punctatis, sparse fusco-sericeis.

Long.  $5\frac{1}{2}$  lin.

*Hab.* Mysol.

Head large; jaws robust, prominent; forehead deflexed, impressed in the middle with a deep longitudinal fovea; surface shining, irregularly but not closely punctured: encarpæ contiguous, triangular; lower portion of face, together with the base of the jaws, obscure fusco-fulvous. Thorax more than twice as broad as long; sides obtusely angled, diverging and slightly sinuate from their base to just beyond the middle, then converging to their apex; upper surface transversely concave, impressed on the hinder half of the middle disk with a large longitudinal fovea; on either side is a deep but ill-defined transverse depression which extends from the outer border nearly to the medial line. Elytra subelongate, nearly parallel, convex; their surface convex, excavated and sinuous below the basilar space, about the

middle of the disk, and on the sides; on the hinder disk are several shallow, ill-defined, longitudinal sulcations.

Genus MIMAstra.

*Corpus* elongatum, modice convexum, dorso subdepressum. *Caput* exsertum; *facie* subperpendiculare; *antennis* corpore brevioribus, gracilibus, filiformibus, articulo primo elongato curvato, a basi ad apicem incrassato, secundo ad tertiam partem primi æquali, tertio secundo duplo longiore, quam articulum quartum paullo brevior, cæteris singulatim quarto fere æqualibus; *palpis* maxillaribus lanceolato-ovatis, apice acuminatis. *Thorax* transversus, lateribus anguste marginatis, obsolete angulatis; disco irregulariter excavato. *Elytra* thorace latiora, postice paullo dilatata, lateribus anguste explanato-marginata, modice convexa, dorso deplanata, confuse punctata. *Pedes* graciles, sat elongati; *coxis* anticis erectis, contiguis; *femoribus* posticis non incrassatis; *tibiis* omnibus apice muticis; *tarsorum* posticorum articulo basali duobus sequentibus conjunctim æquali; *unguiculis* bifidis. *Prosternum* obsoletum.

Type, *Mimastra arcuata*.

The less exserted and smaller head, the shorter third joint of the antennæ, the flattened upper surface, together with the obsolete prosternum, separate the genus before us from *Momæa*.

*Mimastra arcuata*.

*M. elongata*, subnitida, dorso subdepressa, subtus obscure olivacea; capite thoraceque fusco-fulvis, illo vertice, hoc disci maculis quinque metallico-olivaceis; antennis pedibusque piceis, femoribus infra tibiisque apice fulvis; scutello nitido, nigro; elytris subelongatis, postice leviter ampliatis, granulosis, obsolete rugulosis, tenuiter punctatis, metallico-olivaceis, singulatim limbo laterali fasciaque arcuata prope medium posita, ad marginem adfixa, fulvis.

Long.  $4\frac{1}{2}$  lin.

*Hab.* India.

Thorax one-half broader than long; sides distinctly margined, nearly straight and parallel, moderately dilated, obtusely angled just before their middle; upper surface covered with about six large excavations; the green patches are arranged two in the middle of the disk, and three in front of the basal margin, the two lateral larger than the others.

Genus SAstra.

*Corpus* elongatum, convexum, supra pube brevissima adpressa plus minusve dense vestitum. *Caput* exsertum; *facie* perpendiculari, brevi, transversa; *mandibulis* mediocribus; *antennis* corporis longitudini fere æqualibus, gracilibus aut sat gracilibus, filiformibus; articulo primo curvato, a basi ad apicem incrassato, secundo brevi, tertio duobus præcedentibus longitudine æquali aut paullo longiore, quarto et sequentibus singulatim tertio brevioribus, inter se fere æqualibus; *oculis* magnis, prominentibus, integris; *palpis* maxillari-

bus apice anguste ovatis, acuminatis. *Thorax* transversus, lateribus medio sæpe angulatis; disco subplano, medio longitudinaliter sulcato, utrinque transversim impresso; angulis omnibus tuberculo setigero armatis. *Elytra* elongata aut subelongata, fere parallela, postice vix ampliata, anguste explanato-marginata, convexa, dorso subdeplanata, infra basin non aut vix transversim depressa, pube sericea plus minusve dense vestita, confuse punctata, sæpe disco exteriori longitudinaliter sulcata. Pedes graciles, elongati; *coxis* anticis contiguus aut fere contiguus; *femoribus* posticis non incrassatis; *tibiis* omnibus apice muticis; *tarsorum* anticorum articulo basali duobus sequentibus longiore; *unguiculis* bifidis. *Prosternum* angustissimum, sæpe fere obsoletum.

Type, *Sastra placida*.

The smaller head, much shorter and transverse face, together with the much more pubescent upper surface of the body, will sufficiently distinguish *Sastra* from *Momæa*.

*Sastra placida*.

*S. elongata*, modice convexa, sordide flava, nitida; abdomine antennisque fuscis, his basi pallidioribus; elytris dense punctatis, pube adpressa fusca vestitis, pallide fusco-violaceis.

Long. 4 lin.

*Hab.* Mysol.

Head impressed with a longitudinal groove, which extends from the anterior edge of the epistome to the vertex; encarpæ contiguous, large, pentagonal. Thorax nearly twice as broad as long; sides nearly parallel, slightly rounded in front, narrowed posteriorly; middle of disk impressed with a longitudinal sulcation, which extends from base to apex, but is interrupted in its middle; on either side is a broad transverse depression which occupies nearly a third of the whole surface; scattered distantly over the thorax, but rather more crowded on the anterior margin, are some large deep punctures. Elytra subparallel, lateral border narrowly dilated, flattened along the suture, closely punctured; densely clothed with adpressed fuscous pubescence; on the outer disk are two shallow longitudinal sulcations, separated from each other by an elevated ridge.

*Sastra limbata*.

*S. elongata*, pallide flava, nitida; oculis nigris; elytris metallico-violaceis, singulatim pallide flavo limbatis.

Long.  $3\frac{2}{3}$  lin.

*Hab.* New Guinea.

Face short, transverse; space between the insertions of the antennæ broad, impressed with a longitudinal groove, which runs downwards across the epistome and upwards to the vertex; carinæ large, contiguous, subpyriform; antennæ four-fifths the length of the body, slender; apex of jaws piceous. Thorax



nearly twice as broad as long; sides subparallel, slightly rounded, narrowed and sinuate behind their middle; surface smooth, impunctate, the longitudinal sulcus interrupted in the middle, less deeply impressed than the lateral foveæ, which are broader and deeper, but ill defined. Elytra not very closely punctured, nearly glabrous in the single specimen before me (which is, in all probability, worn); the entire limb, with the exception of a small space near the scutellum, narrowly edged with flavous; basilar space bounded beneath by a shallow depression; running along the outer disk, and bounded exteriorly by an indistinct ridge, is a broad, shallow, longitudinal groove; on the hinder disk near the middle are also to be seen the traces of a second, very ill defined.

XXIX.—On the *Australian Species of Paludina*.

By E. VON MARTENS, M.D., C.M.Z.S.

ONLY one Australian species is mentioned in the list of the species of this genus given by Frauenfeld in the 'Verhandlungen des zoologisch-botanischen Vereins in Wien,' 1862, as well as in Reeve's 'Conchologia Iconica.' Having enjoyed the advantage of examining some others in the British Museum and in the Zoological Museum of Berlin, I shall here give comparative descriptions of them.

1. *Paludina australis*, Reeve, Conchol. Icon. 1863, no. et fig. 71.

Probably *P. essingtonensis*, Shuttleworth, Frauenfeld, *l. c.* p. 1162.

*P. testa conico-globosa, perforata, tenui, confertim spiraliter undulato-striata, virescenti-cornea, fasciis rufo-fuscis 3-5 picta; spira gradata; anfr. 5-6 inflati, sutura profunda distincti; apertura subperpendicularis, circulari-ovata, angulo supero modice acuto; peristoma interruptum, album.*

Altitudo 38, diameter major 31, minor 25, aperturæ altitudo 21, latitudo 17 mill.

Operculum normale.

Australia; collected by Mr. Gilbert at Port Essington. (B.M.)

Similar in size and form to the European *P. vivipara*, Müll., Lam. (*P. Listeri*, Forbes), but readily distinguished by its sculpture being similar to that of some species of the Indian Archipelago. The three principal bands occupy the same place as those of the European species, or as the principal ridges in the Indo-Chinese (*P. angularis*, Müll., and *P. costata*, Q. & G.); but in several specimens there are two additional bands, narrower and paler, the one above, the other beneath the uppermost of the three principal ones.